CLAIMS

WHAT IS CLAIMED IS:

1. A copper foil for lamination to a dielectric substrate, the copper foil comprising:

said copper foil being coated with a laser ablation inhibiting layer having an average reflectivity value of at least 40 that is effective to provide a lamination peel strength to FR-4 of at least 4.5 pounds per inch.

2. The copper foil of claim 1 wherein the average reflectivity value is between 50 and 90.

3. The copper foil of claim 1 wherein said laser ablation inhibiting layer comprises nodules having an average height of less than 1.2 microns.

4. The copper foil of claim 3 wherein said nodules have an average height of from 0.3 micron to 1.0 micron.

5. The copper foil of claim 2 wherein said laser ablation inhibiting layer is a codeposited mixture of chromium and zinc and their oxides.

6. The copper foil of claim 4 wherein said laser ablation inhibiting layer is a codeposited mixture of chromium and zinc and their oxides.

7. The copper foil of claim 2 wherein said laser ablation inhibiting layer is mixture of a metal and a metal oxide and said metal oxide is selected from the group consisting of oxides of chromium, tungsten and molybdenum.

8. The copper foil of claim 4 wherein said laser ablation inhibiting layer is mixture of a metal and a metal oxide and said metal oxide is selected from the group consisting of oxides of chromium, tungsten and molybdenum.

9. An electrically conductive circuit, comprising:

a dielectric substrate having opposing first and second sides;

a first copper foil layer laminated to a first side thereof, said copper foil coated with a laser ablation inhibiting layer having an average reflectivity value of at least 40 that is effective to provide a lamination peel strength to FR-4 of at least 4.5 pounds per inch;

said dielectric layer having a via extending therethrough and terminating at an interface between said dielectric layer and said first copper foil layer.

10. The electrically conductive circuit of claim 9 wherein the average reflectivity value of said laser ablation inhibiting layer is between 50 and 90.

11. The electrically conductive circuit of claim 10 wherein said laser ablation inhibiting layer comprises nodules having an average height of from 0.3 micron to 1.0 micron.

12. The copper foil of claim 11 wherein said laser ablation inhibiting layer is a codeposited mixture of chromium and zinc and their oxides.

13. The copper foil of claim 11 wherein said laser ablation inhibiting layer is mixture of a metal and a metal oxide and said metal oxide is selected from the group consisting of oxides of chromium, tungsten and molybdenum.

14. The copper foil of claim 11 wherein said dielectric substrate is selected from the group consisting of glass reinforced epoxy and polyimide.

15. A method for the manufacture of a printed circuit, comprising the steps of:

(a) coating a copper foil with a laser ablation inhibiting layer that is effective to provide a reflectivity value of at least 40 to said coated copper foil and that is effective to provide a lamination peel strength to FR-4 of at least 4.5 pounds per inch;

(b) laminating said at least a first layer of said coated copper foil to a first side of a dielectric substrate;

(c) forming said first layer into a plurality of circuit traces; and

(d) either before or after step (c) forming at least one via through said dielectric substrate to an interface with said first layer.

16. The method of claim 15 wherein said via is formed by laser ablation.

17. The method of claim 16 wherein said step (a) is effective to form said laser ablation inhibiting layer with an average surface roughness (R_z) of less than 1.0 μm and with nodules having an average height of from 0.3 micron to 1.0 micron.

18. The method of claim 17 including selecting said laser ablation inhibiting layer from the group consisting of a codeposited mixture of chromium, zinc and their oxides, and a mixture of a metal and a metal oxide where said metal oxide is selected from the group consisting of oxides of chromium, tungsten and molybdenum.

19. The method of claim 18 including depositing a laser ablation enhancing layer on a side of said copper foil opposite said interface.

20. The method of claim 18 including laminating a second layer of said coated copper foil to an opposing second side of a dielectric substrate, forming said second layer into a plurality of circuit traces and forming said at least one via through both second layer and said dielectric substrate to an interface with said first layer.